

WHAT IS CLAIMED IS:

- 1                   1.       A film recorder comprises:  
2                   a film recording device configured to expose a frame of film media;  
3                   at least one flat panel display device configured to display at least one color  
4 component image associated with an image; and  
5                   an alignment unit coupled to the film recording device and to the display  
6 device, wherein the alignment unit is used to position an optical axis of the flat panel display  
7 device with respect to an optical axis of the film recording device such that the film recording  
8 device can expose the film media to the plurality of images.
- 1                   2.       The film recorder of claim 1 further comprising an external  
2 illumination source configured to provide illumination to the one flat panel display;  
3                   wherein the external illumination source is one of the group: LED, strobe  
4 lamp, digital light projector.
- 1                   3.       The film recorder of claim 2  
2                   wherein the external illumination source comprises one or more digital light  
3 projectors; and  
4                   wherein the one or more digital light projectors project hex chromatic color  
5 space images.
- 1                   4.       The film recorder of claim 2 further comprising:  
2                   a second flat panel display device configured to display a second color  
3 component image associated with the image;  
4                   a third flat panel display device configured to display a third color component  
5 image associated with the image; and  
6                   an optical combiner coupled to the one flat panel display, to the second flat  
7 panel display, and to the third flat panel display, the optical combiner configured to optically  
8 combine the first color component image, the second color component image, and the third  
9 color component image to form a composite image.
- 1                   5.       The film recorder of claim 4 wherein the film recording device exposes  
2 the frame of film media to the composite image.

1                   6.       The film recorder of claim 5 further comprising wherein the one flat  
2 panel display is monochromatic.

1                   7.       The film recorder of claim 4 further comprising a color filter coupled  
2 between the external illumination source and the one flat panel display, wherein the color  
3 filter is a color associated with a color component of the one color component image.

1                   8.       The film recorder of claim 2  
2 wherein the one flat panel display is also configured to display the second  
3 color component image associated with the image and to display the third color component  
4 image associated with the image.

1                   9.       The film recorder of claim 8 wherein the film recording device exposes  
2 the frame of film media to the one color component image, then to the second color  
3 component image, and then to the third color component image.

1                   10.      The film recorder of claim 9 further comprising:  
2 a plurality of color filters configured to be disposed between the one flat panel  
3 display and the frame of film media, wherein the plurality of color filters includes a first color  
4 filter, a second color filter, and a third color filter;

5 wherein the film recording device exposes the frame of film media to the first  
6 color component image through the first color filter; and

7 wherein the film recording device exposes the frame of film media to the  
8 second color component image through the second color filter.

1                   11.      The film recorder of claim 1 wherein the one flat panel display is  
2 selected from the group: LCD, OLED display, plasma display, EL display.

1                   12.      A method for recording images onto film media comprises  
2 positioning at least one flat panel display with respect to an optical axis of a  
3 film recording unit;  
4 displaying at least one color component image associated with an image on the  
5 one flat panel display; and  
6 exposing the film media to the one color component image on the one flat  
7 panel display.

1                   13.     The method of claim 12 further comprising providing illumination to  
2 the one flat panel display with an external illumination source selected from the group: LED,  
3 strobe lamp, digital light projector.

1                   14.     The method of claim of claim 13  
2                   wherein the external illumination comprises more than one digital light  
3 projector; and  
4                   wherein the more than one digital light projector illuminate the one flat panel  
5 display with images in the RGB and CMY color space.

1                   15.     The method of claim 14 further comprising  
2                   displaying a second color component image associated with the image on the  
3 one flat panel display;  
4                   exposing the film media to the second color component image on the one flat  
5 panel display;  
6                   displaying a third color component image associated with the image on the  
7 one flat panel display; and  
8                   exposing the film media to the third color component image on the one flat  
9 panel display.

1                   16.     The method of claim 15  
2                   wherein before exposing the film media to the one color component image,  
3 disposing a first color filter between the one flat panel display and the film media; and  
4                   wherein before exposing the film media to the second color component image,  
5 disposing a second color filter between the one flat panel display and the film media.

1                   17.     The method of claim 12, wherein the flat panel display is a display  
2 from the group: LCD, OLED display, plasma display, EL display, silicon crystal display,  
3 LCOS display.

1                   18.     The method of claim 14 further comprising:  
2                   positioning a second flat panel display with respect to the optical axis of the  
3 film recording unit;  
4                   displaying a second color component image associated with the image on the  
5 second flat panel display;

6 exposing the film media to the second color component image on the second  
7 flat panel display;  
8 positioning a third flat panel display with respect to the optical axis of the film  
9 recording unit;  
10 displaying a third color component image associated with the image on the  
11 third flat panel display; and  
12 exposing the film media to the third color component image on the third flat  
13 panel display.

1 19. The method of claim 18 further comprising:  
2 combining the first color component image, the second color component  
3 image and the third color component image to form a composite image; and  
4 exposing the film media to the composite image comprising: exposing the film  
5 media to the first color component image on the one flat panel display, exposing the film  
6 media to the second color component image on the second flat panel display, and exposing  
7 the film media to the third color component image on the third flat panel display.

1 20. The method of claim 19 wherein the external illumination source  
2 configured to provide illumination to the one flat panel display includes a color filter having a  
3 color appropriate for the one color component image.

1 21. The method of claim 20 wherein the color is selected from the group:  
2 red, green, blue; cyan, yellow, magenta.

1 22. The method of claim 19 further comprising  
2 positioning the second flat panel display with respect to the optical axis of the  
3 film recording unit; and

4 positioning the third flat panel display with respect to the optical axis of the  
5 film recording unit;

6 wherein combining the first color component image, the second color  
7 component image and the third color component image to form a composite image comprises  
8 using an optical combiner to form the composite image.

1 23. The method of claim 15 further comprising:  
2 making a release print in response to the film media; and

3 displaying the release print to an audience.

1 24. A method for forming a recorded film media comprises:

2 displaying an image of one component color image of a image on a first digital  
3 flat panel display;

4 aligning an optical axis of a film recorder to be substantially parallel to an  
5 optical axis of the first digital flat panel display;

6 controlling a shutter of the film recorder to expose a frame of film media with  
7 the image of one component color image of the image.

1 25. The method of claim 24 wherein the first digital flat panel display is  
2 selected from the group: LCD, OLED, plasma, EL, silicon crystal display, LCOS display.

1 26. The method of claim 24 further comprising:

2 illuminating the first digital flat panel display with an external illumination  
3 source,

4 wherein the external illumination source one of the group: white LED, colored  
5 LED, LED array, strobe lamp, array of strobe lamps, digital light projector.

1 27. The method of claim 26 further comprising:

2 displaying an image of a second component color image of the image on a  
3 second digital flat panel display;

4 aligning an optical axis of the first digital flat panel display with the optical  
5 axis of the film recorder; and

6 wherein controlling the shutter of the film recorder comprises controlling the  
7 shutter of the film recorder to expose the frame of unexposed film media with the image of  
8 first component color image of the image and the second component color image of the  
9 image at the same time.

1 28. The method of claim 27 wherein illuminating the first digital flat panel  
2 display with an external illumination source comprises providing a color filter appropriate for  
3 the first component color image between the external illumination source and the first digital  
4 flat panel display.

1 29. The method of claim 28 wherein a color of the color filter is selected  
2 from one of the group: red, green, blue; cyan, yellow, magenta.

1                   30.     The method of claim 25 further comprising  
2                   displaying an image of a second component color image of the image on the  
3 first digital flat panel display; and  
4                   controlling the shutter of the film recorder to expose the frame of film media  
5 with the image of the second component color image of the image.

1                   31.     The method of claim 30 wherein before displaying the image of the  
2 second component color image, the method includes:  
3                   disposing a color filter between the first digital flat panel display and the film  
4 media;  
5                   wherein a color for the color filter is appropriate for the second component  
6 color image.

1                   32.     The method of claim 31 wherein the color is selected from one of the  
2 group: red, green, blue; cyan, yellow, magenta.

1                   33.     The method of claim 26 wherein illuminating the first digital flat panel  
2 display with the external illumination source comprises disposing a color filter between the  
3 external illumination source and the first digital flat panel display.

1                   34.     The method of claim 26 wherein illuminating the first digital flat panel  
2 display with the external illumination source comprises illuminating the first digital flat panel  
3 display with a first illumination source having a color appropriate for the first component  
4 color image.

1                   35.     The method of claim 34 wherein the first illumination source  
2 comprises red LEDs.